



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/576,739

03/12/2007

Jeffrey William Stewart

P71255US0

5441

136 7590 06/29/2009

JACOBSON HOLMAN PLLC
400 SEVENTH STREET N.W.
SUITE 600
WASHINGTON, DC 20004

EXAMINER

WALTERS JR, ROBERT S

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

06/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,739	Applicant(s) STEWART, JEFFREY WILLIAM	
	Examiner ROBERT S. WALTERS JR	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-25 are cancelled. Claims 26-45 are pending and presented for examination.

Drawings

The drawings are objected to because the phrase "Acceptable Heat Envelope" is hard to read in Figure 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37

Art Unit: 1792

CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

The reference document (DE29619160) has not been considered as neither a translation nor a statement of relevance has been provided.

Claim Objections

Claims 26, 35 and 43-45 are objected to because of the following informalities:

In claim 26 the recitation of ("the first powder coating") and (whether the same type of powder or different) and ("the second powder coating") should be removed and replaced by "applying a first powder coating", "applying a subsequent second powder coating, wherein the powder may be the same or different from the powder of the first powder coating" for clarity.

Claim 35 is the same as claim 34. It appears that claim 35 was intended to depend from claim 27, and for examination purposes the claim has been construed in this manner.

Appropriate correction is required.

Claims 43-45 should be rewritten as "A substrate coated by the method of claim ..." for clarity.

Art Unit: 1792

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 26 is indefinite as it recites the limitation “and still sufficiently heated first powder coating” but step c does not require the first powder coating to be sufficiently heated for any particular reason and therefore it is unclear what the first powder coating is still sufficiently heated for. For examination purposes, the claim has been interpreted that the second powder coating is applied immediately after the first coating step without a step of allowing the coated substrate to cool prior to the second coating step.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 1792

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 26-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sedlmeyr (U.S. Pat. No. 6436485) in view of Fredericksen et al. (U.S. PG PUB No. 2003/0113476) and Kroeger et al. (U.S. Pat. No. 5387442).

I. Regarding claims 26-35 and 40-45, Sedlmeyr teaches a substrate coated by a method (column 2, lines 22-29) and the method of coating a substrate to provide a product comprising:

- (a) heating the substrate sufficiently to enable its powder coating (column 4, lines 39-46);
- (b) applying a powder coating to the surface of the substrate (column 4, lines 46-48);
- (c) partially heat curing the first powder (column 2, lines 35-43);
- (d) applying another powder coating to the partially cured powder coating immediately after the partial heat curing step without an intervening cooling step (column 3, lines 15-17) and heat curing both coating layers (column 3, lines 9-12).

Sedlmeyr further teaches that both of the curing steps involve heat curing by exposing the coated substrate to plural fixed infrared radiant heat sources by movement of the substrate relative to the plural fixed radiant heat sources (see Figure 2 and abstract). Finally, Sedlmeyr teaches that the curing of the second powder completes the curing (column 3, lines 10-12 and column 3, lines 55-57).

Sedlmeyr fails to teach the coating and curing steps being conducted while the substrate is on a conveyor and that the plural radiant heaters are spaced apart to provide a movement caused pulsing of exposure to the heating effect. Sedlmeyr further fails to teach the utilization of a pulsing heat source.

Art Unit: 1792

Fredericksen teaches a similar method for powder coating comprising applying a powder coating, curing, applying a second powder coating and curing (see Figure 1). Fredericksen further teaches that the substrate to be coated is conveyed on a conveyor through the processing stations (see Figure 2 and 0046). Kroeger teaches a method of heating powder coatings by application of infrared radiation interspersed with cooling cycles (comparable to pulsing) to allow for the curing of the paint without damaging the substrate (abstract). Kroeger teaches that the pulsing can be accomplished by conveying the coated substrate under areas through which IR passes followed by passive cooling areas where no IR passes to provide continuous cycle treatment (column 3, lines 38-52). Kroeger also teaches that the pulsing can actually be accomplished by using a pulsed infrared radiant heat source (column 3, lines 53-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sedlmeyr's method by performing the method steps while the substrate is being conveyed on a conveyor as disclosed by Frederickson. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sedlmeyr's method to provide the plural IR heat sources spaced apart to provide pulsed exposure to the IR heat sources and to utilize pulsed IR sources as well to provide the same effect, as is disclosed by Kroeger. One would have been motivated to modify Sedlmeyr's method by conveying the substrates by a conveyor as this would allow for the continuous and rapid processing of the substrates, without the need for manually moving the substrates among process stations. Furthermore, one would have been motivated to modify Sedlmeyr's method by using pulsed IR heat sources and conveying the coated substrates under plural IR heat sources spaced apart to provide a pulsing effect as Kroeger teaches that this allows for the coating of heat sensitive

Art Unit: 1792

substrates without damaging the substrate (abstract) by keeping the heat applied to melt and cure the powder from having time to attack a heat sensitive substrate (column 2, lines 57-63).

II. Regarding claims 36-39, Sedlmeyr in view of Fredericksen and Kroeger teach all the limitations of claims 26, 27, 28 and 29 (see above), but fail to explicitly teach that the movement of the substrate relative to the IR radiant heat sources is intermittent, rather than continuous. However, Kroeger makes clear that the heating times, the maximum temperature allowed, cooling and so on, must be adapted for the substrate and the powder paint by testing (column 3, lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the substrate may have to stay in either a heating or cooling section longer, depending on the particular substrate and the particular powder being coated. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sedlmeyr in view of Fredericksen and Kroeger's method by having the movement be intermittent, such that the coated substrate can either be heated or cooled for a longer amount of time. One would have been motivated to make this modification as it would allow for the coating process to be optimized to ensure that the substrate was not damaged and the coating was able to melt and cure properly.

Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shiveley (U.S. PGPUB No. 2002/0034594)

Conclusion

Claims 26-45 are pending.

Claims 26-45 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit
1792

Application/Control Number: 10/576,739

Page 9

Art Unit: 1792

/ROBERT S. WALTERS JR/

June 26, 2009

Examiner, Art Unit 1792